

REMARKS

The Examiner's Office Action mailed March 24, 2009, which rejected all pending claims, has been reviewed. Reconsideration of the rejections in view of the foregoing amendments and following remarks is respectfully requested. Moreover, Applicants have reviewed the Office Action of March 24, 2009, and submit that the above Amendments and the following Remarks are responsive to all points raised therein. Applicants believe that currently pending claims 1, 3, 11-20 are now in form for allowance.

Status of Claims

Claims 1, 3, 11-20 are pending in the application. New Claim 20 has been added. New Claim 20 is a combination of previously presented claims 1, 17, and 19. No new matter has been added.

Rejection of Claims 1, 3 and 11-19 under 35 USC § 103(a)

Reconsideration is requested of the rejection of claims 1, 3 and 11-19 under §103(a) as being unpatentable over Lange et al. (US Patent No. 5,152,986) in view of Bartel et al. (US Patent No. 6,323,213).

The claimed invention is directed to a liquid pharmaceutical preparation for oral administration. Amended Claim 1 recites a liquid pharmaceutical preparation that includes pradofloxacin bound to an ion exchange resin, characterized in that the loaded ion exchange resin is dispersed in a carrier medium comprising water and one or more pseudoplastic gel formers. The pseudoplastic gel former is selected from the group consisting of polyacrylic acid, xanthan, microcrystalline cellulose, cellulose ether, bentonite, and a mixture thereof.

As the Examiner correctly notes the addition of thickeners in Lange is optional. As stated before, Lange actually discloses several thickeners. The present invention requires specific pseudoplastic gel formers. These pseudoplastic gel formers ensure that the liquid composition of the present invention has stability to sedimentation. In particular, the present invention has a

sort of gel-type 3-dimensional structure which helps to prevent sedimentation. Stability to sedimentation can be measured with shear viscosity and yield stress. Generally, specific pseudoplastic gel formers provide specific yield points and shear viscosity to different formulations, i.e. liquid vs. semi-solid formulations. Certain pseudoplastic gel formers would not provide adequate yield points and shear viscosity, i.e. proper stability to sedimentation, as in the present liquid invention. Applicants have conducted an experiment to support this and have included the experimental data and a declaration by Dr. Olaf Behrend herewith this response. As can be observed from the study results and as noted by Dr. Behrend, silica, one of the thickeners mentioned by Lange et al., included in Formulas 1-4, provides a lower shear viscosity and no yield point as compared to the present invention, Formula 5, having a shear viscosity of at least 3 times as much as Formulations 1-4 and a detectable yield point. In addition, the sedimentation of the silica formulations, Formulas 1-4, can be seen clearly from the photographs of the study, in comparison to the present invention, Formula 5, where no sedimentation can be observed. As such, Applicants submit that it would not have been obvious to prepare the formulation of the present invention without undue experimentation and hindsight.

In addition, Applicants have found that compositions with pseudoplastic gel formers are particularly well accepted and tolerated after oral administration. This is supported by the biological example, page 22 of the specification, which shows that the formulations according to the examples of the present invention can compete with a particularly well palatable commercial product. In fact the water-based pradofloxacin formulations of examples 1 to 4 gave better results than example 10 with a non-aqueous basis. Moreover, it should be taken into account that palatability is a particular problem with cats. Lange et al mention that binding the quinolone to an ion exchanger masks the bad taste because the loaded resins do not dissociate in water and therefore there is only a very low concentration of free quinolone and the bitter taste is minimal. However, Applicants compositions including the pseudoplastic gel formers add to the palatability because they have a particularly good mouthfeel. Lange et al.

contemplate various kinds of formulations including solid preparations like feed additives. Lange et al. do not specifically refer to the problem of preparing a liquid formulation with a particularly good mouthfeel. Also Lange et al. do not point out that pseudoplastic gel formers should be used in the solution of this problem.

Although the examiner is correct that Lange does mention that one of the excipients preferred is water, this is to prepare suspensions. The portion of the application that discusses suspensions does not include thickeners or viscosity-increasing thickeners. As stated before, at column 5, lines 23-27, Lange specifically discusses that viscosity enhancing substances are added to make semi-solid preparations or oral pastes not suspensions or liquid formulations, therefore Lange et al. do teach away from the present formulation that includes water and a pseudoplastic gel former.

As stated in United States v. Adams, 383 U.S. 39, 51-52, 148 USPQ 479, 483-84 (1966), combining prior art elements is not sufficient to render the claimed invention obvious if the result would not have been predictable to one of ordinary skill in the art. Although Bartel states that pradofloxacin is a quinolonecarboxylic acid and can be used in human or veterinary medicine, at this time enrofloxacin, rather than pradofloxacin, is the quinolonecarboxylic acid that is typically used and well known in the veterinary field. As such, someone skilled in the art would not find it predictable to use pradofloxacin rather than enrofloxacin without undue experimentation.

For all the reasons stated above, Lange et al. in combination with Bartel et al. do not render claim 1 obvious. Claims 3 and 11-19 depend directly or indirectly from claim 1 and as such are also not obvious in view of Lange et al. in combination with Bartel et al. Claim 20 is a combination of claim 1 and dependent claims 17 and 19 as such claim 20 is also not obvious in view of Lange et al. in combination with Bartel et al.

Conclusion

In view of the above, Applicants respectfully submit that the pending claims are now in form for allowance.

The Commissioner is hereby authorized to charge any fee deficiency or credit any overpayment in connection with this amendment to Deposit Account No. 50-4260.

Respectfully submitted,

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